ELING TIDE MILL

TRUST LIMITED

BC.21 (8/91) Printed by Hampshire Printing Services, Winchester

THE OLD TIDE MILL AT ELING

by

Michael Southgate

"A Miller was ther dwelling many a day;
As eny pecok he was proud and gay.
Pypen he coude and fisshe, and nettes bete,
And turne coppes, and wel wrastle and shete;
Any by his belt he baar a long panade,
And of a swerd ful trenchant was the blade.
A joly popper baar he in his pouche;
Ther was no man for peril dorste him touche.
A Sheffield thwitel baar he in his hose;
Round was his face, and camuse was his nose.
As piled as an ape was his skulle
He was a market-beter atte fulle.
Ther forste no wight hand up-on him legge,
That he ne swoor he sholde anon abegge.
A theef he was for sothe of corn and mele,
And that a sly and usaunt for to stele."

from The Reves Tale – Geoffrey Chaucer 1340? – 1400.

THE OLD TIDE MILL AT ELING

by Michael Southgate

"Moreover the said Thomas considering that a certain causeway and bridges in the same for passengers on foot and horseback had been built of old between Elyng and Totton but had long before been damaged by the waves of the sea and severe tempests to the great harm of the people there passing over the construction of which the repair had been from the alms of the people of that district from a time beyond the memory of man as is said undertakes for the salvation of his soul and the soul of Margret late his wife and the souls of their parents friends and benefactors to new make and sufficiently repair the said causeway for foot and horse within two years next placing no timber therein except in places where timber must of needs be placed so that the said causeway may be likely by human discretion to last a hundred years."

Lease to Thomas Mydlington 25th December 1418.

MAJOR DATES IN HISTORY OF ELING TIDE MILL AND CAUSEWAY

364-375	A Roman road is believed to have run from Lepe through Eling. A coin of Valentian 1st (364-375) found deep in churchyard.
850 A.D.	Aethelwulf, Saxon King of Wessex gave land for Eling Church and graveyard.
1086	Domesday Book lists corn mill at Eling.
1300	Nicholas le Coupere and others fined for carrying off timber from the New Forest to Eling mill.
1382	Given to Winchester College by William of Wykeham as part of its endowment. The College leased it to tenants until 1975.
1418	Earliest surviving lease, granted to Thomas Mydlington of Southampton. Mill and causeway to be rebuilt within two years.
1581	A lease makes it clear that there was a wheat mill and a malt mill, both under one 'rowfe' (roof).
1741-2	Causeway breached and £195 spent on repairs to bridge, mill, tumbling bay and great hatches.
1754-5	Causeway repaired with stone from the Isle of Wight.
1785	Present building probably erected by John Chandler.
1878	Tumbling bay bridge rebuilt as weir.
1886	Causeway breached in a storm. Night of 26-27 December.
1890	Former grain store on quay converted to steam mill.
c. 1898	Most of machinery replaced by Armfields of Ringwood.
1920s	Concentrating mostly on animal feed.
1936	Machinery for animal feeds converted to diesel, one waterwheel still driving two pairs of stones.
1941	All milling ceased.
1945	Hatches removed to stop Rumbridge flooding, but silting of creek increased.
1975	Purchased by New Forest District Council from Winchester College, for restoration as a working museum.
1975-80	Restoration by volunteers and Work Creation Teams.
1980	Mill re-opened as working museum.

EARLY HISTORY OF THE MILL

The present mill building is believed to date from the end of the 18th century and the grain store from the early 19th century. Cut into the keystone of the headrace arch which carried water from the mill-pond underneath the mill is the date 1755, marking a period of major repairs following damage by floods. The whole structure rests on a foundation of substantial stone blocks, thought to be the base of an earlier mill. The site is thought to have been in continuous use for well over 900 years, although the fabric of the mill has been renewed many times.

Watermills using the current of rivers to grind corn were known in the Roman Empire but the use of tidal power, providing a reliable source of energy, was a development of medieval technology. At least one cornmill was recorded at Eling at the time of the Domesday Survey in 1086, and this may have been a tide mill, making use of an ancient causeway built across the river valley for the benefit of travellers.

Under the feudal laws which shaped medieval society the Lord of the Manor had the sole right of building and working mills on his estates. This valuable monopoly was protected by compelling all tenants of the manor to bring their corn to the lord's mill. The tenant of the mill was entitled to keep a fixed portion of the grain for his own use. This system offered plenty of opportunity for an unscrupulous miller to take more than his just share and millers in general soon gained a reputation for dishonesty.

The manor of Eling, including the mill site, was held directly by the Crown until about the year 1200. The estate then passed through numerous hands until it was purchased in the middle of the 14th century by William of Wykeham, Bishop of Winchester, who later granted it to his newly founded college at Winchester as part of its endowment. The link between Winchester College and its estates at Eling has been maintained ever since, although over the centuries the mill was normally leased to others who undertook to keep the mill in good repair but employed a miller to work it.

The earliest surviving lease relating to Eling mill in the College archives dates from Christmas Day 1418, when the site of a former mill was granted for forty years to Thomas Mydlington of Southampton, at an annual rent of 13s. 4d. (67p) after the first year. The terms of the lease required him within two years to build and equip a new mill on the site and to restore the old causeway, which had fallen into decay. The foundations of both mill and causeway were to be of stonework to protect them from storm damage.

Fishing rights were a traditional perquisite belonging to all watermills but in 1575, the miller at Eling, Robert Knight, was presented before the Admiralty Court at Southampton, which regulated fishing within the port area, for placing nets of an illegal type beneath his mill.

Other benefits available to the tenant of the mill are mentioned in a lease of 1581, including wharfage dues on ships using the harbour at Eling and payments in kind from customers bringing corn to be ground. At this time the mill possessed one pair of wheat-grinding stones and another pair used to crush barley for malt making, each being driven by its own waterwheel.

The mill was leased in 1625 to Sir John Mill of Eling. The Mill family estates in the district were very extensive and successive generations of the family seem to have kept up the lease from Winchester College for well over a hundred years.

In the middle of the 18th century the College accounts record some 'heavy' expenditure on the mill and causeway, suggesting a major phase of rebuilding. The present 'double-mill' plan was probably established at this time, providing two separate but similar mills under one roof. Records at Winchester College reveal that the causeway was raised by a flood in 1741 and a total of £195 was then spent on works at Eling, including a millwright's fee and labour and materials to build a new bridge and strengthen the causeway. In 1754/5 over £100 was paid for further work. Timber and gravel for repairs were readily available from the College's estates nearby but large quantities of building stone were also brought from the Isle of Wight, the nearest source of supply.

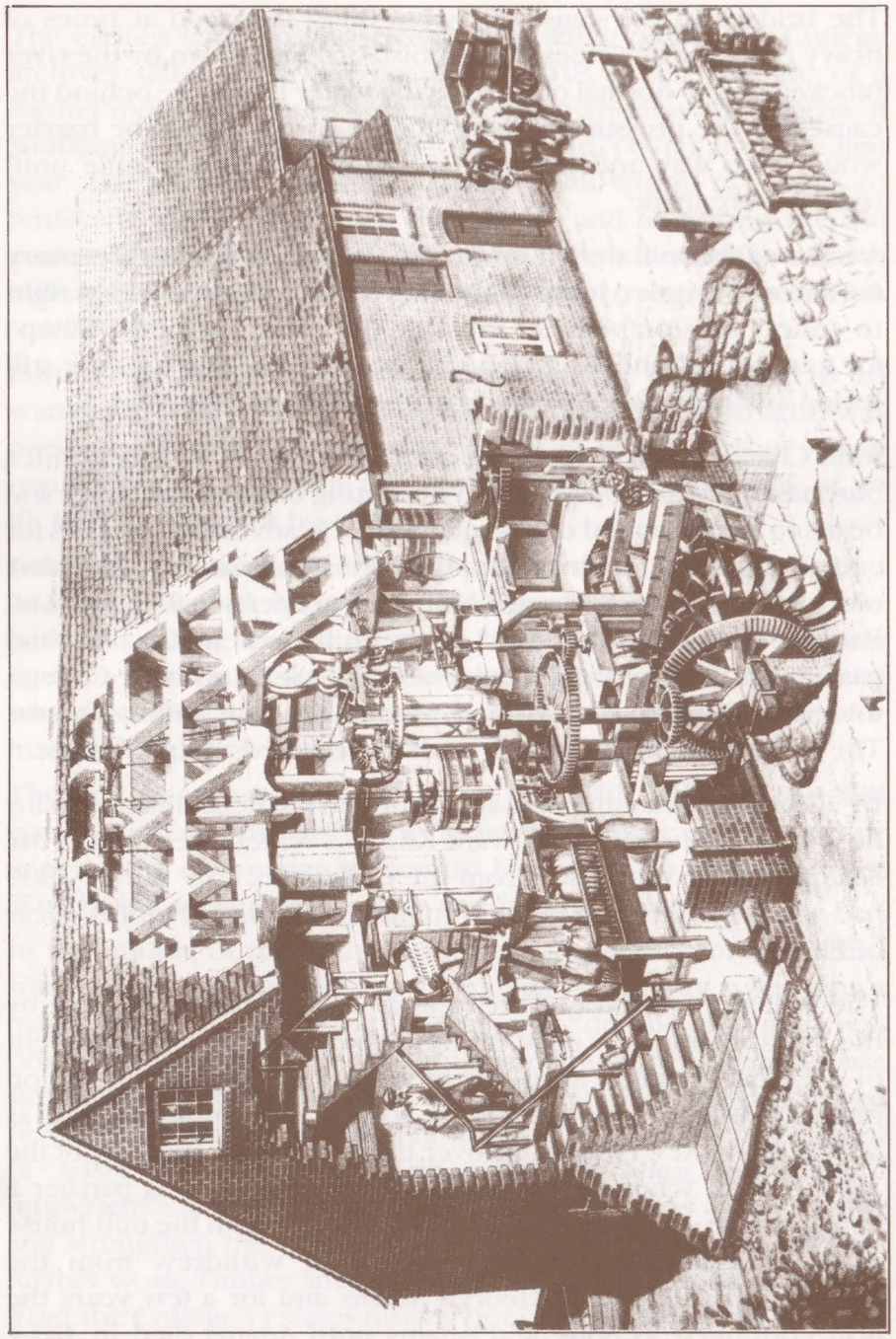
The bridges in the causeway were often damaged at times of heavy rainfall when trees and rubbish brought down by the river blocked up the normal outlets. As the water level rose behind the causeway the pressure would become so great that the barrier would give way and the mill would be left unworkable until repairs were made.

A lease of the mill drawn up by the College in the 18th century for a new occupier, John Chandler, refers to an established right to collect tolls on vehicles crossing the causeway, at 6d. (2½p) for four wheels and 4d. (1½p) for two wheels. The tolls are still levied and until recently stood at the 18th century rates.

John Chandler was evidently a corn merchant as well as a miller, purchasing local crops and also importing cargoes of cereals and beans to be auctioned on the quayside. He advertised in 1778 for coopers to make a regular supply of flour-casks and in 1783 took out a lease from Sir Charles Mill on a property called the Mill Bargain, including the island in the mill pond and a barn and pasture land nearby. In 1785 he renewed his lease with the College, undertaking to take down and rebuild the mill and millhouse. The present mill building was probably erected about this time.

By 1788 John Chandler was apparently in financial difficulties for he conveyed the mill to Edward Knapp a Winchester banker. Mr. Knapp renewed the lease from the College in 1799 but by 1809 had sold his interest in the mill to the Rev. William Phillips, Vicar of Eling.

The mill and causeway were held from Winchester College by the Phillips family for most of the 19th century, at an annual rent of £1, plus 90 gallon measures of wheat (334kg), and 54 gallon measures of malt (200kg). Joseph Soffe was the miller at Eling as tenant of the Rev. Phillips for over thirty years. By the time of the 1851 census, when he was aged 75, he had taken as partner a younger man, George Hunt, who was also living in the mill-house with his family. In October 1851 Hunt withdrew from the partnership in favour of George Adams and for a few years the firm continued as Soffe and Adams until Adams died in 1854, when the tenancy was given up.



Drawing by Mel Wright.

The new occupier, Philip Stride, worked Eling mill until about 1867. He then moved to the water-mill at Nursling on the River Test, about four miles from Eling by road.

Eling mill was put up for sale in 1873 by the trustees of the estate of the late Rev. Francis Phillips. The occupier, Thomas Young, was paying £230 a year in rent 'with an allowance of £4 for leaving the toll-gate open on Sundays'. The tolls were calculated to yield a revenue of £30 a year and the tenant was also allowed a supply of brass for bearings and timber to keep the machinery in working order.

Philip Stride took over at Eling mill once more in 1873, operating the two mills at Eling and Nursling with the help of his two sons, Henry and Edwin, until his death in 1881. His eldest son Henry then succeeded to the family business, which continued in the same ownership until the 1930s.

Eling mill was undoubtedly a very profitable concern for most of the Victorian period, with a flourishing local trade. The grain store attached to the mill had its own wharf where barges and ships of up to 80 tons could unload their cargoes, and there was also a malt-kiln on the premises. About 1885, as a sideline, beer supplied by Ashby's Brewery of Totton was being sold at the mill at a shilling (5p) a gallon.

From 1880 onwards the introduction of roller-milling from the continent had a major impact on the traditional pattern of the milling industry. The new process was ideally suited to handle the huge quantities of American wheat then being shipped to Britain for the first time. Flour-mills driven by steam and with a vastly increased output were built in port areas, and many country water-mills were forced to close.

A steam roller-mill opened beside the railway in Totton in 1886, while in 1890 a former grain warehouse near the tide-mill was also converted into a flour-mill. The tide-mill, with its own access by sea, was better situated to face the challenge of competition than many inland water-mills and was still regarded as economically viable. The well-known Hampshire millwrights Joseph Armfield & Company of Ringwood carried out a full-scale renewal of the machinery about 1898, installing new waterwheels, gearing and other equipment.

THE 20th CENTURY ONWARDS?

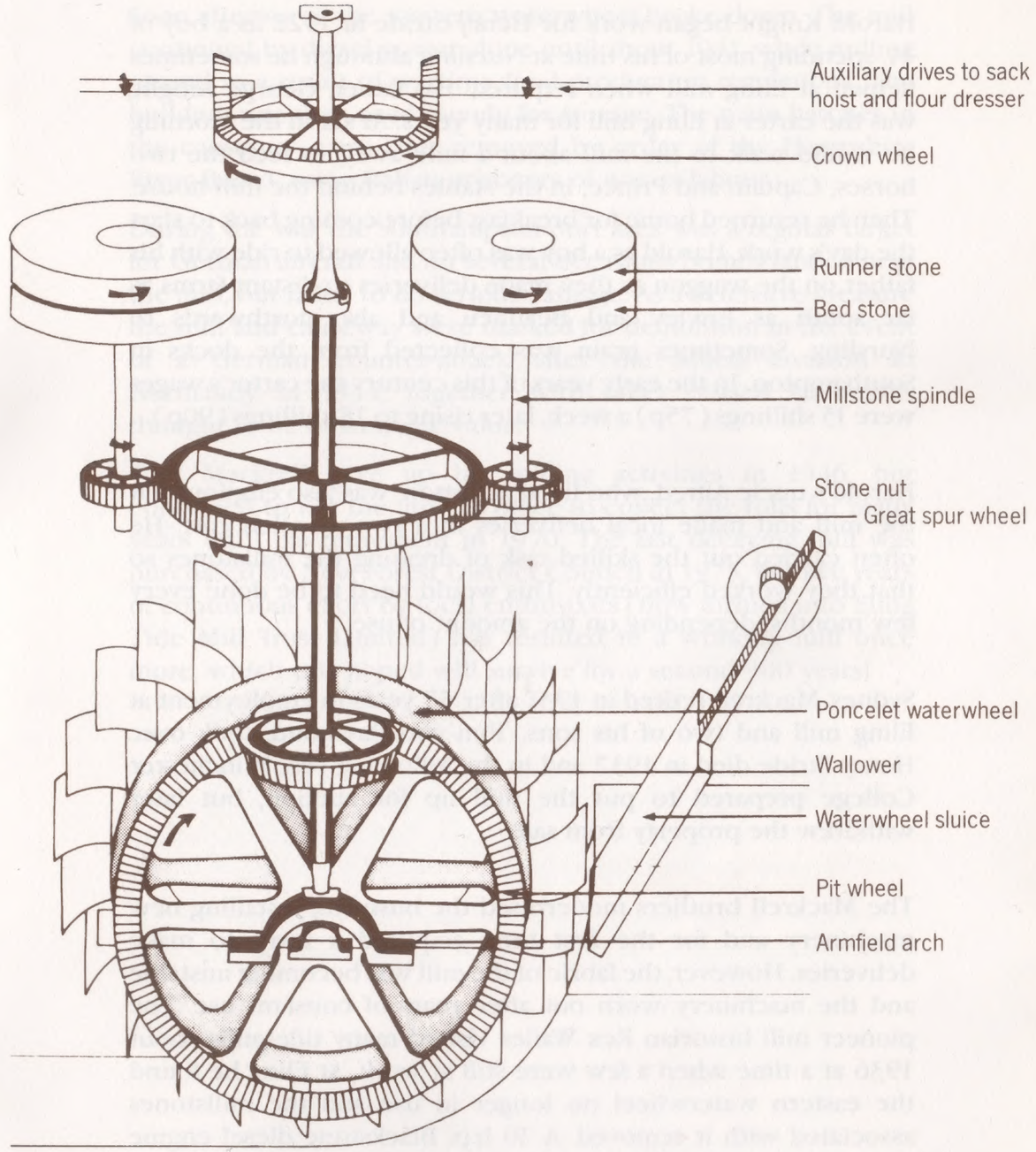
The mill seems to have survived by offering an individual service to local farmers, dealing with small orders that the modern mills would reject, but its place in the local economy was evidently reduced. A report on industrial premises in the district compiled in 1904 refers to it as 'a small water-mill at Eling, worked by one man and a boy'. Information from former employees of the Stride family makes it clear that by the 1920s Eling mill was concentrating on livestock feedstuffs.

Several families still living in the district have links with the mill and their memories give a good impression of the working of the business.

The Mackrell family originally came from Romsey, but George Mackrell was living in Totton as early as 1863, employed as a miller at Eling. His son Sydney, at ten years old, began work at the mill in 1874, assisting with the collection of tolls. He eventually moved into the mill-house as manager and married an Eling girl, Alice Weaver, in 1885. Together they raised a family of 14 children, of whom 12 survived.

The mill-house was a large rambling building, with five bedrooms on the first floor. During winter storms the family often had to retreat upstairs with their belongings when flood water invaded the mill and the lower floor of the house. In January 1887 the causeway itself was breached, carrying away the sea-hatches and leaving a gap at least twenty feet wide.

As the Mackrell family grew up, they often helped their father with the work at the mill. Tom Mackrell recalls that when he was a boy the mill was always busy, with several horses and carts lined up outside. At full rate of working, with all four pairs of stones running, it was possible to turn out nearly three tons of flour on a tide. During the tidal shift four or five men might be at work there and when a grain ship had to be unloaded at the mill's wharf extra help could be called in. In slack times, however, one man could work the mill, since everything could be set to look after itself.



Harold Knight began work for Henry Stride in 1922 as a boy of 14, spending most of his time at Nursling although he sometimes helped at Eling mill when required. His father, George Knight, was the carter at Eling mill for many years. At six in the morning he would walk to the mill about a mile away, to feed the two horses, Captain and Prince, in the stables behind the mill-house. Then he returned home for breakfast before coming back to start the day's work. Harold as a boy was often allowed to ride with his father on the waggon as they made deliveries to distant farms as far south as Fawley and Beaulieu and also northwards to Nursling. Sometimes grain was collected from the docks in Southampton. In the early years of this century the carter's wages were 15 shillings (75p) a week, later rising to 18 shillings (90p).

Harold's uncle Alfred, who lived at Totton, was also employed at the mill and made local deliveries in a two-wheeled cart. He often carried out the skilled task of dressing the millstones so that they worked efficiently. This would need to be done every few months, depending on the amount of use.

Sydney Mackrell retired in 1931 after 57 years in employment at Eling mill and two of his sons, Tom and Raymond, took over. Henry Stride died in 1932 and in the following year Winchester College prepared to put the mill up for auction, but later withdrew the property from sale.

The Mackrell brothers modernised the business, installing new machinery and for the first time acquired a lorry to make deliveries. However, the fabric of the mill was becoming unstable and the machinery worn out after years of constant use. The pioneer mill historian Rex Wailes visited many tide-mills about 1936 at a time when a few were still at work. At Eling he found the eastern waterwheel no longer in use and the millstones associated with it removed. A 10 h.p. Blackstone diesel engine had been installed to run machines to process animal feed. Two pairs of stones were also working, driven by the remaining waterwheel.

Soon afterwards the western waterwheel broke down. The mill continued by diesel power alone until about 1941, when milling ceased as a result of wartime food production regulations. The building was then used merely for storage. The main hatches in the causeway were later removed by order of the Hampshire River Board, using Italian prisoners of war as labour.

During the war the Southampton port area was a regular target for German aircraft and on several occasions bombs landed near the mill, but failed to do serious damage. As a defensive measure the mill and causeway were marked for demolition in the event of a German counter-attack after the Allied invasion in Normandy in 1944, together with other coastal landmarks thought to be of strategic value.

Tom Mackrell gave up his milling activities in 1946, but continued to use the miller's office to collect the tolls for many years until his retirement in 1970. The fast decaying mill was purchased by New Forest District Council in 1975, but five years of continuous effort by local enthusiasts (now formed into Eling Tide Mill Trust Limited) has resulted in a working mill once more, which it is hoped will survive for a second 900 years!

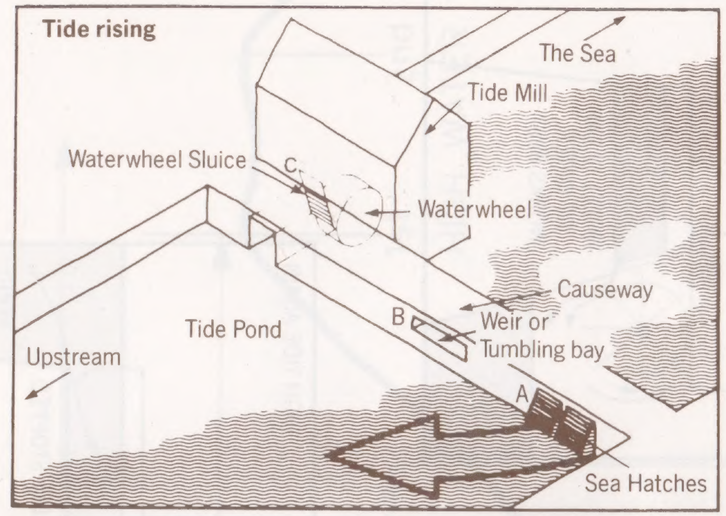
HOW IT WORKS

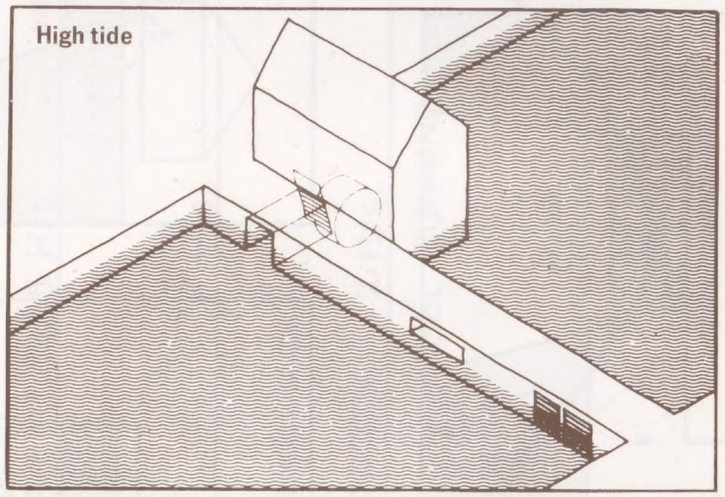
Tide mills were invented about 900 years ago and were usually built on inlets branching off tidal estuaries. This requires the construction of a dam which incorporates a special type of sluice gate, known locally as the 'sea hatch', a weir or 'tumbling bay' and the hatch to control the waterfeed onto the waterwheel.

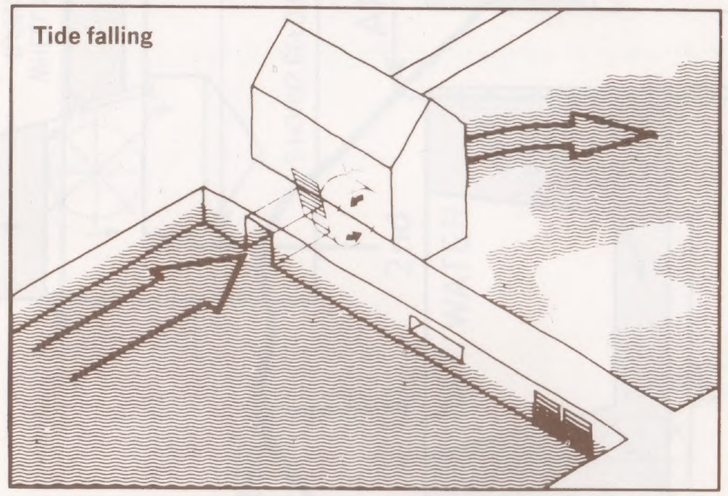
Both the sea hatches (A) contain flaps which open with the incoming tide and close automatically at high tide so impounding the water in the inlet. The water is stored partly in the mill pond and also for about two miles up Bartley Water. This small river feeds the inlet and provides some fresh water to mix with the salt water and work the mill. The tumbling bay (B) automatically maintains the head of water required to work the mill machinery, at about six feet, and also acts as a relief, or spillway, for flood water. There used to be two angled waterwheel sluices (C) inside the mill to control the waterfeed for two separate waterwheels and milling plant. The eastern one of these has been restored as it was, but the western sluice has been replaced with a vertical flood gate.

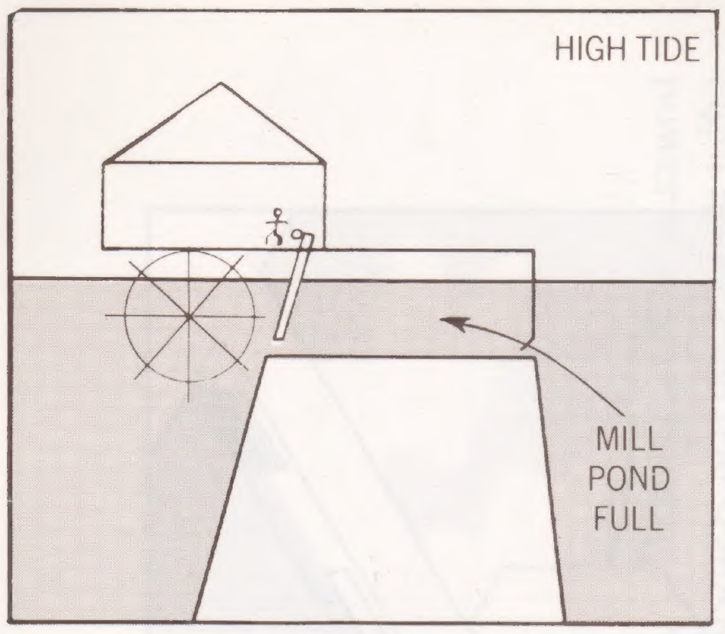
To work the mill, all hatches are closed on the previous low water and the incoming tide pours through the sea hatch flaps to fill the tidal mill pond. The impounded water is released through the internal eastern hatch once the tide has receded sufficiently to clear the waterwheel of backwater. Milling then continues until the tide comes in again and stops the waterwheel turning.

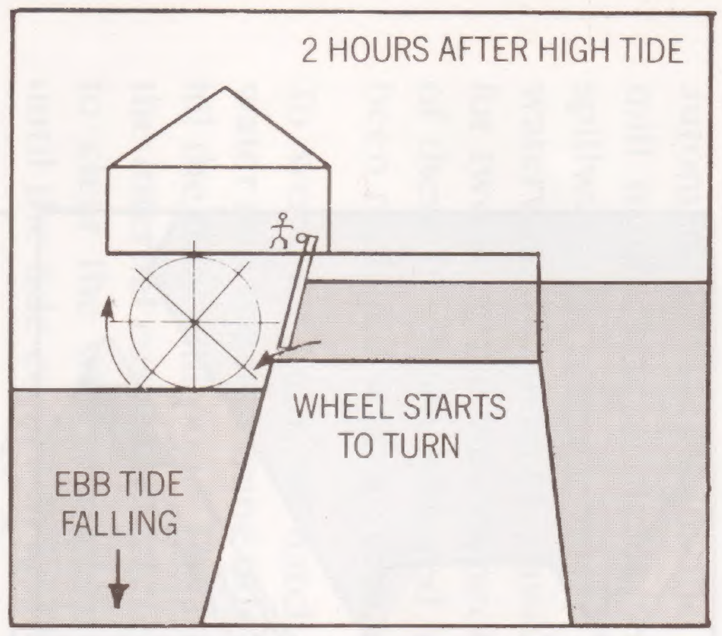
About four hours milling time are available each tide making eight hours each day. Some hours may be inconvenient, but tidal power is at least reliable.

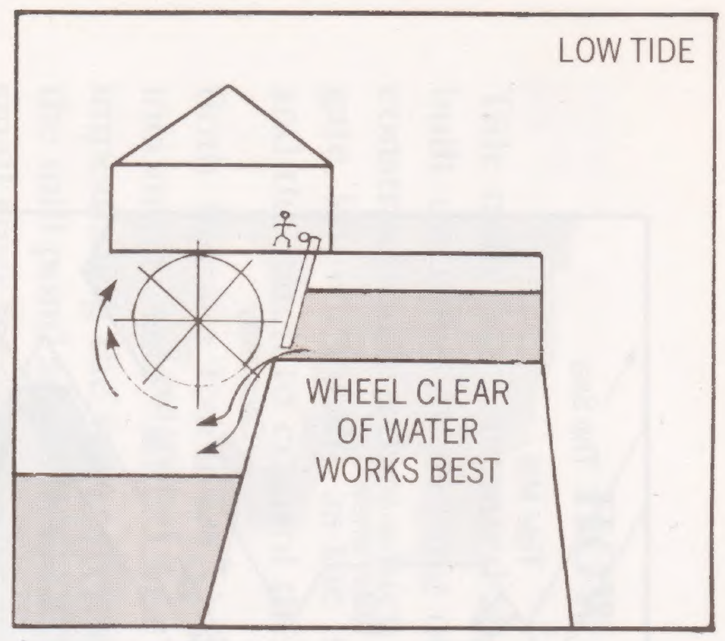


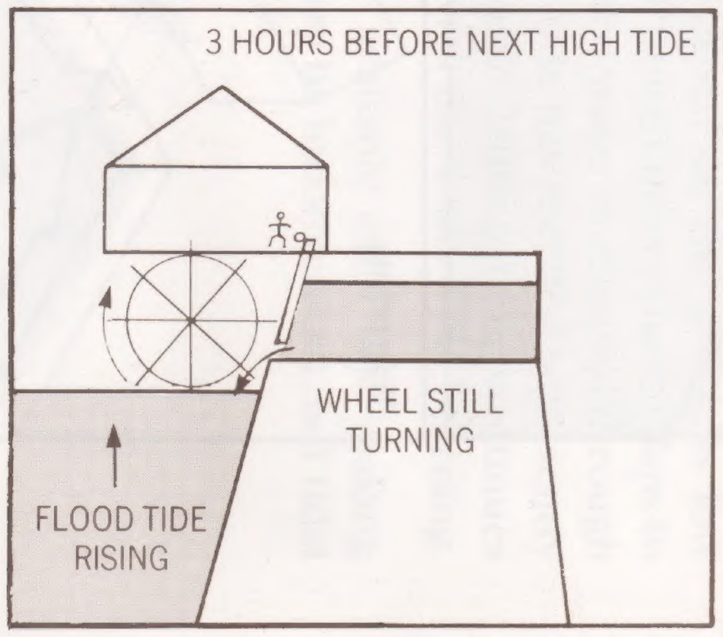


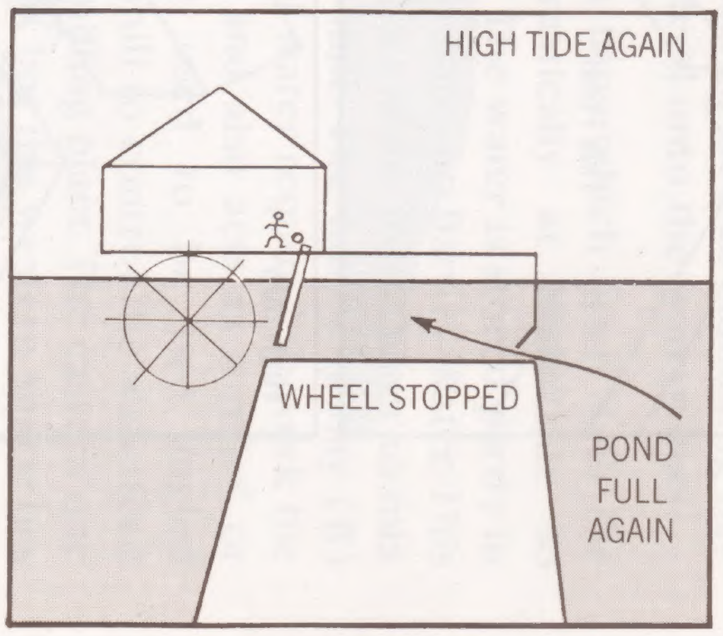




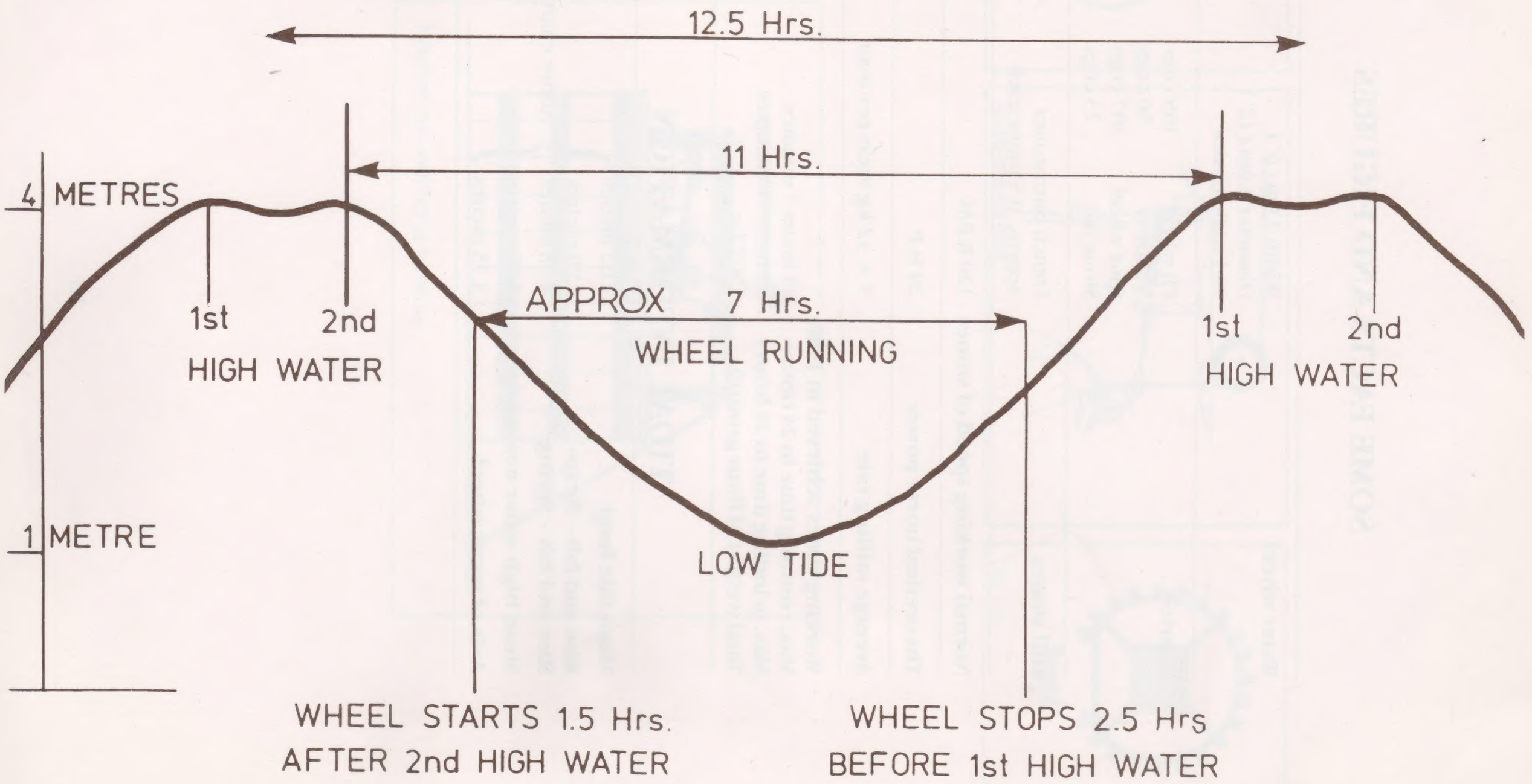








WHEEL RUNNING TIMES

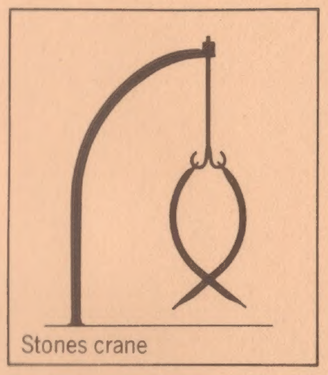


SOME FACTS AND FIGURES

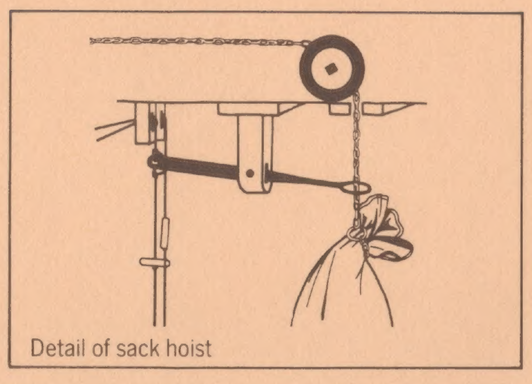
Water wheel	Width 1.8m (6′) Diameter 3.6m (12′) 24 Paddle blades	
Gearing	Pit wheel Wallower Spur wheel Stone nut	108 cogs 50 cogs 107 cogs 23 cogs
Mill stones	French burr stones Approx. 0.5 tonne each	
Normal working speed of stones	120 R.P.M.	
Theoretical horse power	29 H.P.	
Average milling rate	3 × 32 Kg Sacks per hour	
Working times achieved in 1986:		
Max. running time in 24 hours	14 hours 7 minutes	
Max. grinding time in 24 hours	12 hours 40 minutes	
Total weight of flour ground	1307 Kg	

TIDAL INFORMATION

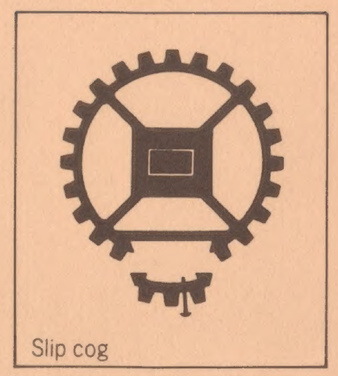
Mean tide level	2.62 metres	Above chart datum
Rise and fall – Neaps	1.98 metres	
Rise and fall – Spring	4.08 metres	
Mean high water neaps	3.75 metres	
Axis of water wheel	3.75 metres	



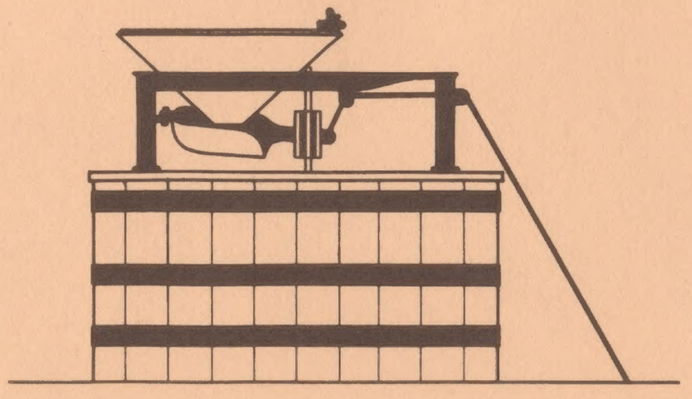
Stones crane



Detail of sack hoist



Slip cog



Millstone tun with horse furniture